Idioblasts of Cruciferae.—SCHWEIDLER[16] has decided to assign a systematic value to the peculiar idioblasts of the Cruciferae. The author at present reserves judgment as to their generic value, though this is expected to be established by further work. He has no doubt, however, that suborders and tribes can be accurately defined. On this basis he divides the family into three suborders. The first is characterized by the presence of idioblasts which contain chlorophyll and which are located exclusively in the mesophyll. The idioblasts of the second suborder occur in the vascular tissue and differ from those of the first group in not containing chlorophyll. The third suborder is composed of members which have both kinds of idioblasts. Just what would happen to the systematic standing of an individual so unfortunate as to have had the development of its idioblasts inhibited is certainly not for the reviewer to say, but in view of the urgent necessity of establishing systematic work upon an experimental basis rather than morphological, it is difficult to escape the conviction that more or less futility is involved in all those efforts of which this paper is an example.—RAYMOND H. POND.

Araucarineae.—A preliminary note by THOMSON[17] states that in Agathis there are many supernumerary nuclei in the pollen tube and that in Araucaria as many as thirty were counted. The pollen tube grows along the surface of the ligule for 22^{cm} or more before entering the micropyle. The anatomy of the ovule and development of the archegonia, as well as of the pollen tubes and megaspore membranes indicate that the Araucarineae occupy a very isolated position among the Coniferales.

SEWARD and FORD in an abstract of a paper[18] read before the Royal Society Dec. 14, 1905, indicate the scope of an extensive investigation of the Araucarieae. The section headings are: Introduction, distribution, diagnosis and synonymy, seedlings, root and stem anatomy, leaves and leaf traces, reproductive shoots, fossils, and phylogenetic considerations and conclusions.

The most important conclusion is that the group, unlike the Cycadales, has been derived from lycopodiaceous ancestors. The Araucarieae differ so greatly from the other Coniferales that the authors suggest the substitution of the term, *Araucariales* for *Araucarieae*.—CHARLES J. CHAMBERLAIN.

Inhibitory action.—ERRERA[19] suggests that the non-development of lateral branches or their growth in a particular position (e. g., of certain conifers) is determined by inhibitory stimuli (de nature catalysatrice si l'on veut) traversing either bark (Araucaria) or all living cells (Picea). We may conceive, he says, the apex of the stem or root as a sort of tyrant who forbids the subjacent

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[16]SCHWEIDLER, J. H., Die systematische Bedeutung der Eiweiss- oder Myrosinzellen der Cruciferen nebst Beiträgen zu ihrer anatomisch-physiologischen Kenntniss. Ber. Deutsch. Bot. Gesells. **23**:274–285. *pl.* 1905.

[17]THOMSON, R. B., Preliminary note on the Araucarineae. Science **22**:88. 1905.

[18]SEWARD, A. C., and FORD, Sibille, O., The Araucarieae, recent and extinct.

[19]ERRERA, L., Conflicts de préséance et excitations inhibitoires chez les végétaux. Mém. Soc. Roy. Bot. Belgique **42** : 27–43. 3. Aug. 1905.

branches to erect themselves or in other cases to develop, though they have the same tendency to do so as he; their geotropism or their power of growth is held in check by his own. Suppress the apex, let it die or become enfeebled, and the subjugated branches lift their heads. Several could erect themselves and take the lead, and that is sometimes observed. But ordinarily a new conflict for precedence occurs among the branches; the one nearest the apex or the most vigorous near one early asserts its supremacy and in its turn keeps its rivals at its feet. *Cf.* the independent and almost simultaneous proposal of the like idea by McCALLUM, BOT. GAZETTE **40**: 262. Oct. 1905.—C. R. B.

Ecological survey.—PETHYBRIDGE and PRAEGER[20] have added another vegetation map and ecological description to the list of vegetation surveys of the British Isles. The area discussed lies south and west of Dublin. After a historical introduction the geology, physiography, floristics, and survey methods are briefly explained. The vegetation is divided primarily into littoral, agrarian, hill-pasture, and moorland zones, and the woodlands. The zones are further subdivided into associations. These are described in detail and as far as possible related to the factors determining their occurrence. The text is accompanied by a map and five excellent plates of vegetation types. The paper will prove of especial interest to those who have followed the work of R. SMITH, W. SMITH, and LEWIS in Scotland and England.—E. N. TRANSEAU.

Alternation of generations in animals.—In criticism of CHAMBERLAIN'S paper on this subject[21] LYON[22] holds that the phylogeny of animal gametes gives no evidence of their being reduced or vestigial generations, comparable with the gametophytic generation in plants; similarity of cytological processes does not prove identity of morphological value in the two cases. He refers to the alternation in Hydrozoa, and calls attention to the earlier proposal by BEARD and MURRAY of a theory similar to CHAMBERLAIN'S. In reply CHAMBERLAIN maintains[23] that his critic fails to distinguish between a gametophytic generation and a gametophytic plant. He holds that the generations in Hydrozoa do not alternate in the botanical sense, and points out that although reduction of the gamete-bearing generation has not been proved for animals, there is strong evidence for its having occurred in plants.—M. A. CHRYSLER.

Mechanics of secretion.—PANTANELLI[24] has attempted to ascertain whether or not true secretion of enzymes occurs. He defines secretion as "the emission

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[20]PETHYBRIDGE, G. H. and PRAEGER, R. L., The vegetation of the district lying south of Dublin. Proc. Roy. Irish Acad. B. **25**: 124–180. 1905.

[21]BOT. GAZETTE **39**: 137–144. 1905.

[22]LYON, H. L., Alternation of generations in animals. Science N. S. **21**: 666–667. 1905.

[23]CHAMBERLAIN, C. J. Alternation of generations in animals. Science N. S. **22**: 208–211. 1905.

[24]PANTANELLI, E., Meccanismo di secrezione degli enzimi. Annali di Bot. **3**: 113–142. 1905.